Tom Harrisson's Contribution through Radiocarbon Dating to the Understanding of the Prehistory of Southeast Asia

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TOM HARRISSON was appointed Government Ethnologist and Curator of the Sarawak Museum in Kuching in 1947, a post he held until 1966. Although he was not new to this area, 1947 must be considered the year he officially began archaeological research in Borneo. Tom carried out the first archaeological excavations in Borneo, and, for some areas of that island, these are still the only ones which have been done. From his excavations, particularly at the Great Niah Cave in Sarawak, a number of radiocarbon dates have been obtained that give some idea of the time depth of the prehistoric occupation of Borneo.

Harrisson's most important excavations were at Niah Cave, Sarawak, in western Borneo, beginning in 1954. A good deal of the work at Niah, Brunei, and Sabah was carried on jointly with Barbara Harrisson. The oldest radiocarbon date for Niah Cave is 41,500 $\pm$ 1000 B.P. (GRO-1338), from a depth of 100 inches. Associated with this date are unifacial choppers of classic Southeast Asian Palaeolithic type. From Pit EE, 10 inches below the 41,500 B.P. date, a *Homo sapiens* skull was found. This is the earliest *Homo sapiens* skull known from East Asia. Directly below the skull, a small, unretouched flake was found that is described as a "Mid-Sohan" type (Harrisson 1959*a*). The radiocarbon dates from Niah Cave provide the longest dated cultural sequence in Southeast Asia, going back to 41,500 B.P. It is significant to note that the bottom of the cultural deposit at Niah has not yet been reached.

A radiocarbon date from the Gan Kira Cave deposit at Niah, Y/x5: 6–12 inches deep, of 37,500 $\pm$ 16,600 B.P. (UCLA-957) on *Oyster gigas* is of geological impor-

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tance as it dates the water level in that area at that time. This shell was also used extensively in the cave for making tools.

The work by the Harrissons at Niah Cave has resulted in some interesting data on burial customs. The earliest date for a full burial in Southeast Asia was obtained on a seated burial (no. 147) from Pit E/D2, depth 32–34 inches, dated at 13,640 ± 130 B.P. (GX-7203). The body was placed in a pit "seated," with legs tightly flexed to form an angular base platform. Two extended burials wrapped in matting from the West Mouth Cemetery at Niah have radiocarbon dates of 3400 ± 100 and 3080 ± 40 (Harrisson 1975*a*). A date of 3175 ± 105 B.P. (CX-1478) on wood from the inside of a pottery jar containing human remains is the earliest dated secondary burial in Southeast Asia. This burial (no. 159) is from the West Mouth Cemetery. The large jar has paddle-beater designs on it.

Brooks, Heglar, and Brooks, in this volume, report that radiocarbon dating on a group of 34 burials indicates that burials in coffins or wrapped in matting occurred over a 4000-year period, beginning about 3000 B.C. and continuing to about A.D. 1000. Flexed burials occurred over a broader span of time, being more frequent after 4000 B.C.

Table 1 gives the significant radiocarbon dates for Niah Cave. Table 2 is Harrisson's latest Niah Cave Phase-Typology-Chronology that I have seen. These tables are from Harrisson (1970*a*: 40).

TABLE 1. NIAH CAVE RADIOCARBON DATES

SITE	DATE (AGE IN YEARS B.P.)
West mouth, near deep skull	41,500 ± ca. 1,000
West mouth, near deep skull	39,600 ± 1,000
Gan Kira, fossil oysters	37,500 ± 2,400
West mouth, E/1, 72 in.	32,630 ± 700
West mouth, E/1, 48 in.+	19,750 ± 190
West mouth; outer edge of frequentation	11,030 ± 280
West mouth; outer edge of frequentation	10,110 ± 310
Jeragan Cave, burial	4,300 ± 160
West mouth, at 12 in.	4,040 ± 70
Megala Cave, burial	3,130 ± 240
Jeragan Cave, burial	3,070 ± 410
West mouth, subsurface	2,700 ± 70
West mouth, late Neolithic	2,695 ± 65
Painted Cave, death-ship coffin	2,300 ± 80*
Gua Samti, death-ship coffin	2,115 ± 150*
Painted Cave, death-ship coffin	1,180 ± 70*
Painted Cave, death-ship coffin	1,045 ± 75*

* Subject to special error owing to the age of the tree used and the part of the tree trunk employed for the coffin.

TABLE 2. NIAH CAVE CULTURAL CHRONOLOGY

	PHASE	MAIN MATERIAL CHARACTERISTICS	APPROXIMATE SIGNIFICANT START DATE AT NIAH (IN ROUND FIGURES)
1.	Early Stone	Tiny "chip flakes"?	?
2.	Early Stone	Large flakes and chopper tools	ca. 40,000 B.C. +
3.	Early Stone	Quartzite flakes	ca. 30,000 B.C.
4.	Intermediate ("Mesolithic")	Advanced flakes; edge-ground pebble tools	ca. 10,000 B.C.
5.	Neolithic	"Round Axe"	ca. 4000 B.C.?
6.	Neolithic	Quadrangular adzes; pottery; mats; nets	ca. 2500 B.C.
7.	Intermediate ("chalcolithic")	"Soft tools", first metal; elaborate pots	ca. 250 B.C.?
8.	Metal	Iron tools; import ceramics; *glass* beads; "death ships" (for burials)	A.D. 700
9.	Islam	Site looting; Malay texts	A.D. 1400
10.	White	Glass *bottles*	A.D. 1860

Harrisson and O'Connor (1972) obtained one radiocarbon date of 635 ± B.P. from the open site of Bongkisam Santubong, in the Sarawak River delta. The authors interpret this date as coinciding with the end of the major ironworking and trade activity with China at the site. This dating agrees with other evidence, for example, the imported Chinese stonewares and a Tantric Buddhist shrine with distinctive gold and other jewelry.

In 1952 and 1953, Tom and Barbara Harrisson excavated at the open site of Kota Batu, the ancient capital of Brunei. Harrisson (1970*b*) published four radiocarbon dates ranging from A.D. 1300 to A.D. 1815, all from the same depth, 24–30 inches. He makes it clear that there is evidence of disturbance of the deposit of the site. In 1971, Harrisson published an additional eleven radiocarbon dates, ranging from A.D. 1300 to 95 B.C. for Kota Batu from materials obtained at depths of from 54–60 inches to 72–78 inches. This set of dates, plus those published earlier, provides a total of fifteen for Kota Batu, with an overall time range of 95 B.C. to A.D. 1815. Harrisson suggests that Kota Batu was a native Bornean center until the arrival of Islam, about A.D. 1300. Kota Batu became a major international trade center (trading with other parts of Borneo, and with China, Thailand, and Annam), until the major Spanish attack on Kota Batu in A.D. 1578. After the Spanish attack, it was occupied by a small farming population. The main occupation of Kota Batu was from the 10th to the 17th centuries, which paralleled the late T'ang to Ming dynasties in China (Harrisson 1970*b*, 1971, 1974).

From their excavations in Sabah, the Harrissons obtained two relatively early radiocarbon dates. From Agop Atas Cave (Harrisson and Harrisson 1969–70: 168), on food shell *(Clea* and *Thiara)*, from a depth of 54–60 inches, there is a radiocarbon date of 10,800 + 100–2000 B.P. The dated material is associated with worked stone flakes (Harrisson and Harrisson 1971: 166, Fig. VI, II). The

authors interpret this date as indicating the presence of a pre-Neolithic culture in Sabah. At Tapadong Cave, Sabah (p. 37, Fig. II/1), a date of 10,300 ± 1110 B.P. was assayed. This date is from human bone with no depth or artifact association reported.

From Tom Harrisson's archaeological work in Borneo (often in association with Barbara Harrisson), there are some seventy-five radiocarbon dates. Most of these are from Niah. I have not seen a stratigraphical profile of the Niah Cave excavations, and seldom in Harrisson's reports is it possible to determine exactly what is associated with what. This situation is especially critical in relation to the *Homo sapiens* skull found "ca 10" below material dated 41,500 B.P. and the earliest artifacts. This problem undoubtedly relates to his lack of training in archaeology. The most unfortunate part of the Niah Cave project is that neither has the work there been published in full nor has the bottom of the cultural deposit been reached.

In spite of these drawbacks, Tom Harrisson's contributions to our knowledge of the prehistory of Borneo are overwhelmingly on the positive side. From Niah Cave, we have a 40,000-year radiocarbon-dated cultural sequence with the earliest *Homo sapiens* skull in East Asia, along with classic Southeast Asian chopper tools. The Niah Cave sequence demonstrates that *Homo sapiens* was in Island Southeast Asia in late Pleistocene times. The Niah cultural sequence, with its change of artifact types through time, argues for the eventual finding of similar sequences in other parts of Borneo.

Tom Harrisson has made another important contribution to our thinking on the prehistory of Southeast Asia. It is not in relation to radiocarbon dating, as such, but it is of such importance as to warrant mention here. Harrisson (1975*b*: 53–70) has pointed out that the Kota Tampan site, Perak, Malaysia (and the only site of the Tampanian "tools"), long held on the basis of previous geological determinations to be on the order of several hundred thousand years old, is in fact not more than 35,000 years old at most. This revision of the age of the gravel beds from which the "tools" came is the result of a restudy of the area by Neville S. Haile, of the University of Malaya. Haile has found the basis for the conclusions of the earlier geological study of the area, namely, that the sea level was much higher than at present, to be incorrect. In fact, Harrisson implies (1975*b*: 61) that there is some reason to think that the Tampanian "tools" may indeed not be tools at all. The rock being banged around by the fast flowing river could have caused the flaking on the rocks. This situation is not unique to Kota Tampan. With *Homo sapiens* in Borneo and Australia by 40,000 B.P., the possibility of Kota Tampan being on the order of 35,000 B.P. is of particular significance. There is no doubt that this entire Tampanian problem needs restudy and rethinking.

Tom Harrisson initiated archaeological excavations in Borneo, and, through the radiocarbon dating of his archaeological excavations in Sarawak, Brunei, and Sabah, has established the presence of *Homo sapiens* on Borneo in late Pleistocene times. We need someone (many) to carry on from his great beginning.

References

BROOKS, SHEILAGH T., RODGER HEGLAR, and RICHARD H. BROOKS

1977 Radiocarbon dating and palaeoserology of a selected burial series from the Great Cave of Niah, Sarawak, Malaysia. *AP* 20(1): 21–31.

HARRISSON, TOM

1958*a* The Caves of Niah: a history of prehistory. *SMJ* 8(n.s. 12): 549–595.

1958*b* Carbon-14 dated palaeoliths from Borneo. *Nature* 181: 792.

1959*a* New archaeological and ethnological results from Niah Caves, Sarawak. *M* 59(1): 1–8.

1959*b* Radio carbon—C-14 datings B.C. from Niah: a note. *SMJ* 9(n.s. 13–14): 136–138.

1964 100,000 years of Stone Age culture in Borneo. *Journal of the Royal Society of Arts*, February: 174–192.

1970*a* The prehistory of Borneo. *AP* 13: 17–45.

1970*b* First radio-carbon dates from Kota Batu, Brunei, and associated dating problems in Borneo. *BMJ* 2(1): 188–197.

1971 Deep level carbon dates from Kota Batu, Brunei (95 B.C.–1300 A.D.). *BMJ* 2(3): 96–107.

1972 The Borneo Stone Age—in the light of recent research. *SMJ* 20(n.s. 40–41): 385–412.

1973 Carbon-14 dates from Kota Batu, Brunei (Borneo). *AP* 16(2): 197–199.

1974 Early "jar burials" in Borneo and elsewhere. *AP* 17(2): 141–144.

1975*a* Early dates for "seated" burial and burial matting at Niah Caves, Sarawak (Borneo). *AP* 18(2): 161–165.

1975*b* Tampan: Malaysia's Paleolithic reconsidered. In *Modern Quaternary Research in Southeast Asia*, ed. by Gert-Jan Bartstra and Willem Arnold Casparrie, pp. 53–70. Rotterdam: Balkema.

HARRISSON, TOM, and BARBARA HARRISSON

1969–1970 The prehistory of Sabah. *Sabah Society Journal* 4: 1–235.

HARRISSON, TOM, and STANLEY J. O'CONNOR, JR.

1972 The first C-14 date for an open site in Borneo. *AP* 15(1): 89–92.